

### **REMARKS**

The claims have not been amended. Accordingly, claims 1-18 are currently pending in the application, of which claims 1 and 16 are independent

Applicants respectfully request reconsideration and timely withdrawal of the pending objections and rejections for the reasons discussed below.

#### ***Rejections Under 35 U.S.C. § 103***

Claims 1-6, 8-10, and 11-18 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 6,335,548 issued to Roberts, *et al.* ("Roberts") in view of U.S. Patent Application Publication No. 2005/0001562 applied for by Pederson, *et al.* ("Pederson"). Applicants respectfully traverse this rejection for at least the following reasons.

To establish an obviousness rejection under 35 U.S.C. § 103(a), four factual inquiries must be examined. The four factual inquiries include (a) determining the scope and contents of the prior art; (b) ascertaining the differences between the prior art and the claims in issue; (c) resolving the level of ordinary skill in the pertinent art; and (d) evaluating evidence of secondary consideration. *Graham v. John Deere*, 383 U.S. 1, 17-18 (1966).

In view of these four factors, the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit, and should "identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. *KSR Int'l. Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1385, 1396 (2007). The Federal Circuit requires that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).

Finally, even if the prior art may be combined, there must be a reasonable expectation of success, and the reference or references, when combined, must disclose or suggest every claimed feature. See *in re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicants respectfully submit that the rejection of claims 1 and 16 must be withdrawn because the Office Action fails to establish a *prima facie* case of obviousness.

The Office Action fails to establish a *prima facie* case of obviousness of claims 1 and 16 at least because its reliance on Roberts's dies 1910 and 1911 to teach the heat sinks of claims 1 and 16 is completely unreasonable. Here, the Office Action states "note that HS1 and HS2 are sitting on top of heat extraction 204 which are conducting heat to 204 therefore they are considering as the heat sinks [sic]" (Office Action, page 3). In other words, the Office Action concludes that dies 1910 and 1911 are heat sinks because they conduct heat to the heat extraction member 204. Applicants disagree. A heat sink is not merely a heat conducting member, as the Office Action suggests. Although claim terms are given their broadest reasonable interpretation, that interpretation must be consistent with the specification, and it "must also be consistent with the interpretation that those skilled in the art would reach" MPEP § 2111 (emphasis added). The Office Action's interpretation is neither. In fact, probably every element in Roberts's device is capable of transferring heat. Under the Office Action's logic, therefore, every element of Roberts's device could be a heat sink. This analysis does not withstand scrutiny. A person of ordinary skill in this art would not equate Roberts's dies 1910 and 1911 with a heat sink. Equating dies with heat sinks merely because the dies conduct heat goes far beyond any reasonable meaning of "heat sink," as an ordinarily skilled artisan would understand this term. This is particularly so here, where Roberts also teaches that dies 1910 and 1911 are formed on heat extraction member 204, which "consists of a thermally conductive body ... that provides a dominant path ... to transfer heat generated by the emitter of the device

into the ambient environment" (col 9, lines 19-24). Thus, although it would be reasonable to rely on Roberts's heat extraction member 204 to teach a general heat sink, it clearly is unreasonable to rely on Roberts's dies 1910 and 1911 to teach the heat sink of claims 1 and 16. The rejections of claims 1 and 16 can not possibly be maintained on this flawed analysis.

Furthermore, Applicants respectfully submit that the Examiner confuses an LED die with an LED package. Specifically, the Examiner considers Pederson's LED package as Robert's LED die. This confusion makes for continuously unreasonable office actions. But as an ordinarily skilled artisan knows, an LED die is quite different from an LED package. Thus, Applicants respectfully submit that future Office Actions should not be based on similar, erroneous reasoning.

Finally, Applicants respectfully submit that an ordinarily skilled artisan would not have combined Roberts's embodiment in Figures 5-6 with Roberts's embodiment of Figures 19A-19B, as the Office Action does (page 3). Here, the Office Action acknowledges that Roberts' embodiment of Figures 19A-19B does not disclose a heat sink of electrically and thermally conductive metallic materials, but relies on the embodiment of Figures 5-6 to cure this deficiency (page 3). Specifically, the Office Action states that "[n]evertheless, Roberts, one embodiment, FIGS 5-6 does teach a heat sink of electrically and thermally conductive metallic materials (502, col. 16, lines 30-67)" (page 3; emphasis added). Applicants disagree that a skilled artisan would have combined these embodiments in the manner claimed. Roberts does not teach that the bottom portions of dies are of metallic materials. Generally, the bottom portion of a die is part of a substrate suitable for growing compound semiconductors thereon. Thus, the substrate can not be of metallic material. Consequently, an ordinarily skilled artisan would not have combined these embodiments in this manner.

Thus, the Office Action fails to establish a *prima facie* case of obviousness of claims 1 and 16 for at least the reasons noted above.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of claims 1 and 16. Claims 2-6, 8-10, 11-15, and 17 depend from claim 1 and are allowable at least for this reason. Claim 18 depends from claim 16 and is allowable at least for this reason. Since none of the other prior art of record, whether taken alone or in any combination, discloses or suggests all the features of the claimed invention, Applicants respectfully submit that independent claims 1 and 16, and all the claims that depend therefrom, are allowable.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Roberts in view of Pederson. Applicants respectfully traverse this rejection for at least the following reasons.

Applicants respectfully submit that claim 1 is allowable over Roberts and Pederson. Hence, claim 7 is allowable at least because it depends from allowable claim 1.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of claim 7.

### ***Dependent Claims***

Without disclaiming the independent patentability of any other dependent claim, Applicants respectfully submit that claims 17 and 18 are separately patentable.

According to claim 17, the at least two heat sinks of claim 1 “each consist of either copper, gold, silver, or aluminum” (emphasis added). And per MPEP § 2111.03, “[t]he transitional phrase ‘consisting of’ excludes any element, step, or ingredient not specified in the claim” (emphasis added). In rejecting claim 1, the Office Action relies on Roberts’s dies 1910 and 1911 to teach the at least two heat sinks (Office Action, pages 2-3). As Roberts teaches, however, dies 1910 and 1911 emit light at blue and green wavelengths (col. 30, lines 12-14). If

the dies 1910 and 1911 were modified as the Office Action suggests — to consist of either copper, gold, silver, or aluminum — , then they could no longer fulfill their purpose, which is to emit light. Thus, this modification completely destroys the principle of operation of Roberts's device, and it is not *prima facie* obvious for at least this reason.

Claim 18, which depends from claim 16, recites the same features as claim 17. Thus, claim 18 is not *prima facie* obvious for at least the reasons noted above with regard to claim 17.

**CONCLUSION**

Applicants believe that a full and complete response has been made to the pending Office Action and respectfully submit that all of the stated grounds for rejection have been overcome or rendered moot. Accordingly, Applicants respectfully submit that all pending claims are allowable and that the application is in condition for allowance.

Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative at the number below to expedite prosecution.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,

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